#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau



### 

### (43) International Publication Date 16 June 2005 (16.06.2005)

#### PCT

## (10) International Publication Number WO 2005/054654 A1

(51) International Patent Classification<sup>7</sup>: 1/053

F02G 1/043,

(21) International Application Number:

PCT/GB2004/005118

(22) International Filing Date: 6 December 2004 (06.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0328292.8

5 December 2003 (05.12.2003) G

(71) Applicant (for all designated States except US): MICRO-GEN ENERGY LIMITED [GB/GB]; 100 Thames Valley Park Drive, Reading Berkshire RG6 1PT (GB).

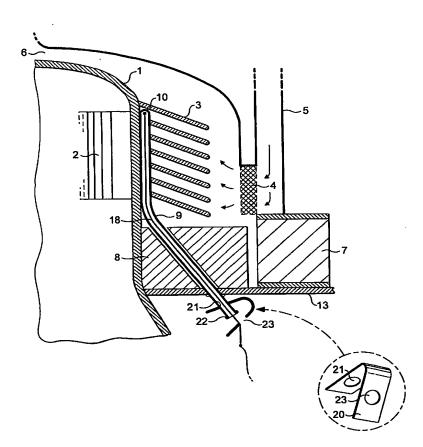
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): WILLIAMS, John

Stephen [GB/GB]; 16 Celeste Road, The Oakalls, Bromsgrove Worcestershire B20 2RP (GB).

- (74) Agents: DRAPER, Martyn, John et al.; Boult Wade Tennant, Verulam Gardens, 70 Gray's Inn Road, London WC1X 8BT (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: A STIRLING ENGINE ASSEMBLY



(57) Abstract: A Stirling engine assembly comprising a Stirling engine having a generally cylindrical head (1). An annular burner (4) surrounds the head and defines a combustion chamber between the burner and head. An annular seal (7) between the burner and head provides a seal for combustion gases. A thermocouple housing (9) is in thermal contact with the head and sealed from the combustion chamber. The thermocouple housing extends out of the combustion chamber, with the interface between the thermocouple housing and combustion chamber being sealed. The thermocouple housing has an opening outside the combustion chamber. A thermocouple (18) in the thermocouple housing extends from a location adjacent to the head out of the opening in the thermocouple housing.

### WO 2005/054654 A1



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

#### Declaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only

#### Published:

— with international search report